Assessment test

1. A processor contains a number of special registers.

   (a) Explain the function of each of the following and describe how they are used:

   (i) The program counter (PC) [2]

   (ii) The current instruction register (CIR) [2]

   (b) Name and describe the function of **three** buses used to carry information between the special registers. [6]

2. Explain what is meant by **pipelining** and why it is used in some processors. [3]

3. (a) Describe the differences between a graphics processing unit (GPU) and a quad-core computer in a personal computer. [4]

(b) Name **two** other applications, apart from graphics processing, for which a GPU, used in conjunction with a CPU, may be used. [2]

4. (a) Describe **three** factors which affect the performance of the CPU. [6]

(b) Describe **one** difference between CISC and RISC architecture. [2]

5. A credit card company is trialling a new system of using a camera phone instead of a password to verify and authenticate a customer's identity when they make an online purchase.

(a) Describe how this system might work. [3]

(b) Describe **two** advantages of using this system rather than using a password. [4]

(c) Describe **two** possible drawbacks of this system. [4]

6. A list of storage devices is given below.

CD-ROM **DVD** **Hard Disk** **USB Flash Memory stick**

a) Using the table below, state the typical capacity of each of the above devices. [4]

Typical capacity	Storage medium
512 Megabytes – 128 Gigabytes	
512 Gigabytes – 4 Terabytes	
600 Megabytes – 700 Megabytes	
2.8 Gigabytes – 4.7 Gigabytes	

(b) Give a typical use for each of these devices. [4]

7. Explain what is meant by virtual memory. [2]

8. Explain why an upgrade to a larger ROM chip would be unnecessary and would not affect the performance of a computer. [2]

[Total 50 Marks]